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Pesticide info

WHAT YOU SHOULD KNOW ABOUT PESTICIDES

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Monitoring protects us and our environment

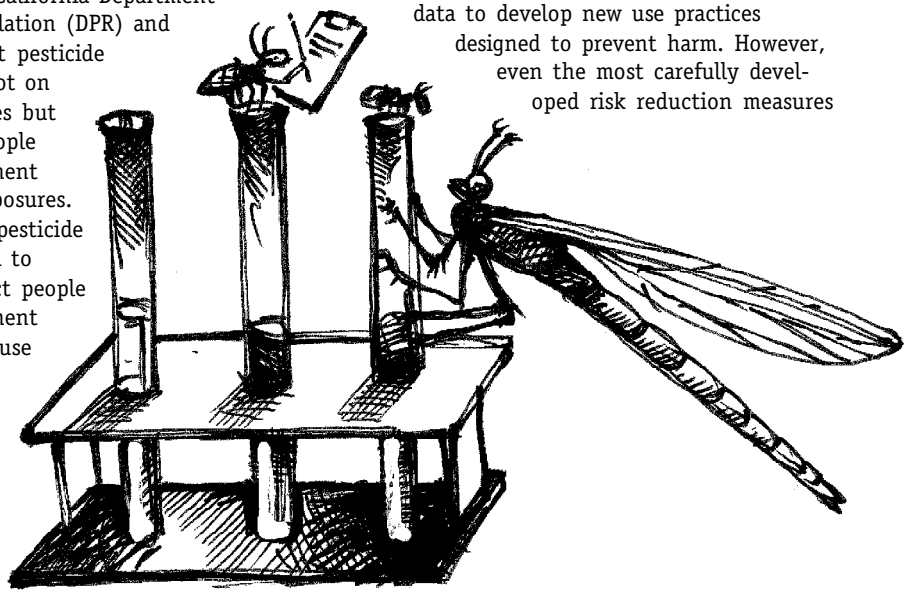
Pesticides are unusual among toxic substances. They are not an unwanted byproduct of another process, for example, an industrial emission or automobile exhaust. Pesticides are substances produced specifically for their toxicity to a target pest, and to work, they must be purposely introduced into the environment. Therefore, regulation of pesticides does not focus solely on assessing toxicity but also on reducing risk by controlling exposure. The effects – beneficial, harmful or benign – of pesticides or any substance are dependent on several factors. The most important is exposure – how much and how often. This follows a basic principle of science: There are no poisons, only poisonous doses.

That is why the California Department of Pesticide Regulation (DPR) and other government pesticide programs focus not on banning pesticides but on protecting people and the environment from harmful exposures. If exposure to a pesticide cannot be limited to levels that protect people and the environment from harm, then use may be banned. But the initial step is to impose strict controls on use, and provide incentives to use less pesticides or pesticides that pose a reduced risk. DPR protects public health and the environment with the nation's most rigorous and comprehensive program to evaluate and control pesticide use.

Why does DPR monitor for pesticides?

Pesticide monitoring may be done to find out if air, water, soil, or vegetation has been contaminated by a pesticide, or to learn the extent of contamination. DPR does regular ground and surface water sampling with this goal in mind.

DPR also does monitoring to evaluate the likelihood of pesticides causing health problems for workers using pesticides and for people near treated areas, and to provide data to develop new use practices designed to prevent harm. However, even the most carefully developed risk reduction measures



Monitoring is part of DPR's process of continual improvement, necessary to fine-tune our understanding of the mechanisms of pesticide dispersal in the environment.

cannot adequately take into account the variety of situations that occur in nature; various microclimates and special environmental characteristics can produce unexpected results. That's why DPR periodically does monitoring to evaluate the effectiveness of its risk reduction measures. If residues of pesticides are found where they should not be – in surface water, for instance – more monitoring may be done to develop or modify ways to ensure contamination does not recur or is reduced. If monitoring finds unacceptable pesticide levels in ambient air, DPR and the county agricultural commissioners will take steps to put in place new use practices to reduce the amount of pesticide that gets into the air.

Why does DPR continue to collect data?

DPR has extensive amounts of exposure and environmental data on pesticides. Why do more monitoring? Monitoring is part of DPR's process of continual improvement, necessary to fine-tune our understanding of the mechanisms of pesticide dispersal in the environment.

Moreover, advances in technology often make it possible to find out information that was unavailable before. New instruments that can measure smaller amounts may be developed, or new analytical techniques that make possible a more detailed analysis. Sometimes DPR does monitoring to evaluate new application equipment and techniques.

HOW A MONITORING STUDY IS DESIGNED

What makes a good study?

Monitoring studies are designed to answer specific questions. For instance, a study may be aimed at finding out how a pesticide is getting into surface water. DPR begins by developing a detailed plan called a "protocol" that explains the question DPR is trying to answer and specifically how we will go about answering it. The protocol identifies the sampling equipment DPR will use and where the sampling will take place. We give a lot of thought to the location and characteristics of the study site and to the sampling instruments. Standard, well-documented methods, procedures, and equipment are used to carry out a study. This assures researchers that the results will be valid and usable. These protocols are reviewed by other scientists in the Department, and often by scientists in other agencies. The results of our studies face similar "peer review," which is considered a cornerstone of scientific research.

Always present in good study design are provisions for laboratory "quality control" analysis. Analysis of control samples assures researchers that the analytical instruments used to read samples are operating properly and producing accurate results.

How does DPR decide where to monitor and what method to use?

When DPR tests the behavior of a pesticide, testing is usually done at application sites (for example, on farms), not under experimental conditions. Sampling sites are carefully chosen based on what we are trying to learn about a pesticide. Sometimes a pesticide is monitored in different seasons or under different weather conditions or with new application equipment.

The monitoring method chosen to answer study questions depends on which standard, accepted sampling devices are known to provide valid results, and on the attributes of both the pesticide and the environment at the study site.

What do monitoring results tell us?

Monitoring can tell us if a pesticide is present and at what levels. This in turn can tell us if particular applications are meeting specified standards or goals, or if risk reduction measures are working. Pesticide monitoring, along with studies by experts in human and environmental health, help us determine the impact of pesticides.

What does DPR do with monitoring results?

DPR publishes its data to document the studies and share the findings, but data is never collected simply to produce reports. Data generated by a study may be used to make immediate decisions or as a foundation for further work. For example, the monitoring data may point to other kinds of testing that needs to be done. DPR may use the data to develop or modify risk reduction measures, or to develop new use restrictions to be administered by the county agricultural commissioners, or pesticide regulations. It may provide the foundation for development of reduced-risk pest control techniques.